

DOCKET NO. 8229-018-27 CIP

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF: Jim HUNTER, et al.

ART UNIT: 2872

SERIAL NO.: 10/050,994

EXAMINER: Alessandro V. Amari

FILING DATE: January 22, 2002

FOR: HIGH CONTRAST GRATING LIGHT VALVE

**DECLARATION, 37 C.F.R. §1.608(b)**

ASSISTANT COMMISSIONER FOR PATENTS  
PO BOX 1450  
ALEXANDRIA, VA 22313-1450

SIR:

We, James Hunter, Chris Gudeman, David Amm and Akira Tomita, do hereby declare and state that:

1. We are the co-inventors of the U.S. Patent Application Serial Nos. 10/029,875, filed December 31, 2001 and 10/050,994, filed January 22, 2002.
2. At the time the inventions claimed in U.S. Patent Application Serial Nos. 10/029,875 and 10/050,994 were made, we were employees of Silicon Light Machine, a division of Cypress Semiconductor Corporation. As conditions incident to employment, we assigned the entire right, title and interest in and to these inventions, and these applications, to Cypress Semiconductor Corporation.
3. The four of us, well prior to December 18, 1998, conceived of and developed a grating light valve comprised of a substrate, typically formed of silicon, and a dielectric layer formed on the substrate, such as silicon dioxide. The invention conceived of and reduced to practice in advance of December 18, 1998 further included a conductive trace formed in the dielectric layer, intended to allow charges trapped at the dielectric layer to escape. The provision of the

conductive trace was particularly focused on trapped charges present on the surface of the dielectric layer. The reflective light processing element we conceived of and reduced to practice before December 18, 1998 further included a plurality of ribbons formed above the substrate and the conductive trace.

4. We have reviewed the claims of the above-captioned patent application, and although we are not patent attorneys, as we best understand them, they correspond to the subject matter we invented prior to December 18, 1998.

5. As evidence of our prior invention, attached hereto is Exhibit A which is a summary of the invention. The date on this summary has been redacted, we understand, but we confirm that the original document, which this is a copy of, reflects a date well in advance of December 18, 1998. The summary accurately describes the subject matter claimed in the above-captioned patent application. This summary was prepared by the four of us.

6. This summary, and the processing steps needed to prepare the necessary device, were addressed and reflected in an invention notebook maintained at Silicon Light Machine ("SLM") a division of Cypress Semiconductor Corporation, and are reflected here to in Exhibit B, which includes pages 29-33 of that invention notebook. The date of those entries is in advance of December 18, 1998.

7. At or about the same time, and in any event, in advance of December 18, 1998, cross-sectional representations of the device prepared were made. These cross-section representations, including the contact trace, are included as Exhibit C.

8. In order to provide a conductive trace on the dielectric layer, to allow trapped charges to escape, it was necessary to develop a new etching process. Two of us, James Hunter and David Amm, developed that process while traveling via airplane to the Texas facility of Cypress Semiconductor Corporation well in advance of December 18, 1998. The process we developed is

reflected in drawings prepared during that trip, which are attached hereto as Exhibit D.

9. Subsequent to the preparation of the grating light valve 6.0 prototype described above, but prior to December 18, 1998, schematics reflecting the grating light valve were prepared. Corresponding schematics are presented as Exhibit E, without date. As shown, the zero order grating light valve has a conductive trace connection that runs through the dielectric layer, to allow the escape of trapped charges. Pictured are the substrate, two sets of ribbons, and gaps in between. The physical structure is reflected in the third schematic. The conductive trace goes from substrate contact to ribbon post, as illustrated.


10. Accordingly, in light of the contemporaneous documents submitted herewith, we confirm that the subject matter of the claims of the above-captioned patent application as recited above, had been conceived of by us, and reduced to practice, in advance of December 18, 1998.

All statements made herein of own knowledge are true, and all statements made on information and belief are believed true. Further, we are aware that willful false statements and the like are punishable by fine, imprisonment, or both, 18 U.S.C. §1001, and that such willful false statements may jeopardize the validity of the above-captioned patent application, and any patent to issue thereon.

Dated: 7 JAN 2004

  
JAMES HUNTER

Dated: 7 JAN 2004

  
CHRIS GUDEMAN

Dated: 8 Jan 04

  
DAVID AMM

Dated: Jan 22, '04

Akira Tomita  
AKIRA TOMITA

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